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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,224	02/28/2002	Harry Tang	BS01-324	5083

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EXAMINER
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WONG, WARNER

ART UNIT	PAPER NUMBER
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2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/13/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/084,224

Applicant(s)

TANG, HARRY

Examiner

Warner Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-7,9-13,16-18 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-23 is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9-13,16-18,20 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claim 18 is objected to because of the following informalities:

On line 15, the limitation "a maximum value" should be corrected as "the maximum value" because such limitation has an antecedent on line 10.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6-10 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Constantinof (US 6,822,961).

**Regarding claims 1 and 7**, Constantinof describes a method/system for provisioning an end user with a virtual circuit in a virtual path (fig. 1, provisioning a SVC (virtual circuit) between a corresponding pair of ATM edge interfaces (virtual path)), comprising:

[means for] receiving a work order requesting provisioning of the virtual circuit for the end user (fig. 3 & col. 6, lines 18-22, receiving a telephone (end) user connection (work order) request requiring a SVC (virtual circuit)),

[means for] determining a virtual circuit identifier of an available virtual circuit in the virtual path (fig. 3 & col. 9, lines 25-28, call connection prompts a

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check of available SVC (virtual circuit) from the cache pool used by a designated pair of ATM edge interfaces (virtual path)),

[means for] determining whether there are less than a pre-determined number of available virtual circuits remaining in the virtual path (fig. 3 & col. 9, lines 25-28, when there are no SVC (virtual circuit) left from the cache pool used by a designated pair of ATM edge interfaces (virtual path)),

[means for] provisioning the virtual circuit for the end user if there are more than the pre-determined number of available virtual circuits remaining in the virtual path (col. 7, lines 27-31, selecting (provisioning) the SVC (virtual circuit) for the call);

[means for] determining whether to establish additional virtual circuits in the virtual path if there are less than the pre-determined number of available virtual circuits remaining in the virtual path (col. 9, lines 48-51 & 57-63, request for new SVC setup (additional virtual circuits) and adds the SVC to the cache).

Constantinof further describes: if there are less than the pre-determined number of available virtual circuits remaining in the virtual path, it will requests a new SVC connection setup and adds the SVC connection to the cache (col. 9, lines 57-63), but fails to explicitly describe:

[means for] serializing requests for additional virtual circuits to establish additional virtual circuits in the virtual path if it is determined to establish additional virtual circuits in the virtual path.

However, it would have been obvious to one with ordinary skill in the art at the time of invention by applicant to modify the method of Constantinof and

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explicitly conduct serialized connection requests for additional circuits, since the existing description encompasses conducting individual incoming requests in order (col. 10, lines 7-12, when  $n=1$  calls before checking cache pool size).

The motivation for describing the connection requests being serialized is that it provides an algorithm to sensitively adapt to fluctuating traffic load between 2 edge interfaces by dynamically controlling the cache size (col. 10, lines 8-10 & 42-46).

Constantinof additionally describes such requests for additional virtual circuits includes: a decision tree comprising a plurality of conditions, each condition having a corresponding action to be performed if the condition is satisfied, wherein the decision tree is being consulted when a new order to provision the end user with a virtual circuit is received to determine an applicable condition, and performing the action corresponding to the applicable condition (fig. 7-8, decision tree with a plurality of conditions 102, 108, 110, etc. each with a corresponding action).

Consequently, Constantinof fails to describe a condition table instead of a decision tree.

However, the use of a condition table comprising a plurality of conditions with corresponding actions which is considered to be optimal present no new or unexpected results with the use of a decision tree comprising a plurality of conditions with corresponding actions instead, so long as the decision is being correctly processed and the corresponding action is determined in a successful way.

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Therefore, it would have been obvious to one with ordinary skill in the art at the time of invention by applicant to modify the invention of Constantinof to use a condition table instead of a decision tree to obtain the invention as specified in claim 1.

**Regarding claims 3 and 9,** Constantinof describes:

creating a set of serialization parameters that are used to serialize requests to establish additional virtual circuits in the virtual path (col. 11, lines 52-54, # waiting connection request, GOS or QOS as control (serialization) parameters in determining cache size, which may prompt additional SVCs for the cache pool).

**Regarding claims 4 and 10,** Constantinof describes resubmitting an unsuccessful request to establish additional virtual circuits in the virtual path (col. 9, lines 33-38, recheck (resubmits) the cache for SVC again).

**Regarding claims 6 and 12,** Constantinof describes determining that the request to establish addition virtual circuits in the virtual path is unsuccessful if it fails (col. 9, lines 33-43, set of SVC is denied/failed).

**Regarding claim 13,** Constantinof describes a system for provisioning an end user with a virtual circuit in a virtual path, comprising:

a connection management server that determines a virtual circuit identifier of an available virtual circuit connection in the virtual path and determines whether there are less than a pre-determined number of available virtual circuit connections remaining in the virtual path, wherein the connection management server can initiate a request for additional virtual circuit

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connections (col. 6, lines 18-22, call connection sub-process (server) determines availability of SVC (virtual circuit identifier) from the cache pool used by a designated pair of ATM edge interfaces (virtual path) and if no SVCs are available (less than a pre-determined number of available VC connections), request for new SVC setup (additional virtual circuits), see col. 9, lines 48-51 & 57-63);

a connection creation system that provisions additional virtual circuit connections in accordance with requests received from the connection management server (col. 9, lines 48-51 & 57-63, call connection sub-process (connection creation system) receives the new SVC (additional virtual circuit) from ATM network and adds the SVC to the cache (provisioning) for the request),

a decision tree (fig. 7-8) comprising a plurality of conditions (fig. 7-8, conditions 102, 108, 110, etc.) that the connection management server consults prior to initiating a request (fig. 7-8 for the connection request at step 100) for additional virtual circuit connection (step 120)

Consequently, Constantinof fails to describe a condition table instead of a decision tree.

However, the use of a condition table comprising a plurality of conditions with corresponding actions which is considered to be optimal present no new or unexpected results with the use of a decision tree comprising a plurality of conditions with corresponding actions instead, so long as the decision is being correctly processed and the corresponding action is determined in a successful way.

Therefore, it would have been obvious to one with ordinary skill in the art at the time of invention by applicant to modify the invention of Constantinof to use a condition table instead of a decision tree to obtain the invention as specified in claim 1.

Constantinof further describes:

wherein the connection management server determines the number of available virtual circuit connections remaining in the virtual path, and provisions an available virtual circuit connection for an end user in accordance with an order to provision a virtual circuit connection for the end user if the number of available virtual circuit connections remaining in the virtual path is greater than a pre-determined threshold (col. 9, lines 25-30, the call connection sub-process (server) provisions an SVC (virtual circuit) when available in cache (greater number of available virtual connections remaining) upon receipt of a [each] connection request, i.e. first come first serve (order of provisioning)),

wherein the connection management server consults the conditions table if the number of available virtual circuit connections remaining in the virtual path is less than the pre-determined threshold (fig. 7-8, call connection sub-process (connection management server) will invoke (consult) the algorithm of updating cache size (conditions table) when there are no available cached SVCs (less than the pre-determined threshold).

Constantinof further describes:

if there is less than the pre-determined number of available virtual circuits remaining in the virtual path, it will consult the decision tree (fig. 7-8) comprising



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a plurality of conditions to request a new SVC connection setup and add the SVC connection to the cache (col. 9, lines 57-63 for the step 120, 122 of fig. 7-8), but fails to explicitly describe:

serializing a plurality of requests for additional virtual circuits to establish additional virtual circuits in the virtual path.

However, it would have been obvious to one with ordinary skill in the art at the time of invention by applicant to understand that method of Constantinof infers and definitively encompasses serializing connection requests (col. 10, lines 7-12, when  $n=1$  calls before checking cache pool size).

The motivation for describing the connection requests being serialized is that it provides an algorithm to sensitively adapt to fluctuating traffic load between 2 edge interfaces by dynamically controlling the cache size (col. 10, lines 8-10 & 42-46).

**Regarding claim 16,** Constantinof describes:

the connection management server re-submits an unsuccessful request for provisioning of additional virtual circuit connections (col. 8, lines 33-38, the call connection sub-process (connection management server) rechecks (re-submits) for a SVC (virtual circuit connection).

3. Claims 5, 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Constantinof as applied to claim 1 above, and further in view of Ohno (US 6,034,962).

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**Regarding claims 5 and 11**, Constantinof fails to describe the step of determining that the request is unsuccessful if it exceeds a pre-determined time threshold.

Ohno describes the step of determining that the request is unsuccessful if it exceeds a pre-determined time threshold (fig. 1, #116 & 118 & col. 9, lines 41-43, timeout 116 defines that the transmit request 102 is unsuccessful).

It would have been obvious to one with ordinary skill of art at the time of invention by applicant to modify a timeout process to determine that the transmission request is unsuccessful as in Ohno for the method/system of Constantinof.

The motivation for combining the teachings is that it provides an efficient communication between transmitting and receiving terminal sides while reducing the CPU usage (Ohno, col. 3, lines 28-33).

**Regarding claim 17**, Constantinof further describes:

the connection management server re-submits a request for provisioning of additional virtual circuit connections (col. 9, lines 33-38).

Constantinof fails to describe: a prior request for provisioning additional virtual circuit connections exceeds a pre-determined time.

Ohno describes: a prior request for provisioning additional virtual circuit connections exceeds a pre-determined time (fig. 1, #116 & 118 & col. 9, lines 41-43, timeout 116 defines that the transmit request 102 is unsuccessful).

It would have been obvious to one with ordinary skill of art at the time of invention by applicant to modify a timeout process to determine that the

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transmission request is unsuccessful as in Ohno for the method/system of Constantinof.

The motivation for combining the teachings is that it provides an efficient communication between transmitting and receiving terminal sides while reducing the CPU usage (Ohno, col. 3, lines 28-33).

4. Claim 18-20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Constantinof in view of Applicant's Admitted Prior Art, hereinafter termed as AAPA.

**Regarding claim 18**, Constantinof describes a method for serializing virtual connection requests in response to a request for provisioning of a virtual circuit connection for an end user in a virtual path, comprising the steps of:

obtaining a virtual circuit identifier associated with a next available virtual circuit connection (col. 7, lines 27-31, selecting (obtaining) an available SVC (virtual circuit connection with identifier) from the cache);

determining whether the virtual circuit identifier is close to an end of a range of virtual circuit identifiers that have been established (col. 9, lines 30-31, lack of SVCs available (end of a range of available virtual circuit identifiers) in the cached pool).

provisioning the virtual circuit connection for the end user if the circuit identifier is not too close to a maximum value of the end of the range of virtual circuit identifiers (col. 9, lines 28-30, available SVC removed from cache & mapped to the connection 106 (provisioning));

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sending of virtual circuit connection requests to request provisioning a plurality of additional virtual circuit connections having an associated range of virtual circuit identifiers if the circuit identifier is too close to the end of the range of virtual circuit identifiers (col. 9, lines 57-63);

determining which conditions of a set of serialization conditions is applicable to a bulk virtual circuit connection request state; and performing an action associated with the condition determined in step (col. 9, lines 25-43 & fig. 7-8, set of conditions and actions to perform for the acquiring SVC (bulk virtual circuit connection request)).

Constantinof fails to explicitly describe:

serializing sending of virtual circuit connection requests to request provisioning a plurality of additional virtual circuit connections;

However, it would have been obvious to one with ordinary skill in the art at the time of invention by applicant to modify the method of Constantinof and explicitly conduct serialized connection requests for additional circuits, since the existing description encompasses conducting individual incoming requests in order (col. 10, lines 7-12, when  $n=1$  calls before checking cache pool size).

The motivation for describing the connection requests being serialized is that it provides an algorithm to sensitively adapt to fluctuating traffic load between 2 edge interfaces by dynamically controlling the cache size (col. 10, lines 8-10 & 42-46).

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Constantinof describes using a minimum cache size value to determine if it is reaching the end of the range of available virtual circuit identifiers to use (col. 9, lines 48-51), but fails to explicitly describe:

a maximum value used for comparing the circuit identifier to check if it is close to the end of the range of virtual circuit identifier.

However, using a maximum value for comparing the circuit identifier to check if it is close to the end of the range of available virtual circuit identifier thereby requiring generating a request for additional virtual circuit identifiers which is considered to be optimal present no new or unexpected results with using a minimum value for comparing the number of virtual circuit identifiers left for provisioning before generating a request for additional virtual circuit identifiers, so long as a threshold is being accordingly used for detection and for generation of a request for addition virtual circuit identifiers in a successful way.

Therefore, it would have been obvious to one with ordinary skill in the art at the time of invention by applicant to modify the invention of Constantinof to use a maximum value for comparing the circuit identifier to check if it is close to the end of the range of virtual circuit identifier which is used for the generation of a request for addition virtual circuit identifiers to obtain the invention as specified in claim 18.

Constantinof also fails to describe:

sending of bulk virtual circuit connection to request provisioning a plurality of additional virtual circuit connections having an associated range of virtual circuit identifiers.

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AAPA describes:

sending of bulk virtual circuit connection request to provision a plurality of additional virtual circuit connections having an associated range of virtual circuit identifiers (paragraphs 9-12).

It would have been obvious to one with ordinary skill in the art at the time of invention by applicant to incorporate the operation of sending a bulk virtual circuit connection request for provisioning additional VC connections.

The motivation for combining the teaching is that it precludes the need to set up each virtual circuit connection individually (AAPA, paragraph 9).

**Regarding claim 20**, Constantinof describes performing an action includes:

performing one of sending the bulk virtual circuit connection request and not sending the bulk virtual circuit connection request (col. 9, lines 33-38, condition of rechecking the cache for SVC (sending the connection request) depends on outcome results of new SVC request)).

**Regarding claim 24**, Constantinof further describes:

creating a conditions table having a plurality of conditions, each condition having a corresponding action to be performed if the condition is satisfied, determining which one of the plurality of conditions applies, and performing the action corresponding to the applicable condition (col. 9, lines 30-43, set of conditions (table) and actions to perform when cache is empty).

***Allowable Subject Matter***

5. Claims 21-23 are allowable.

***Response to Arguments***

6. Applicant's arguments with respect to claims 1,3-7,9-13,16-18, 20 and 24 have been considered but are moot in view of the new ground(s) of rejection. The examiner uses the decision tree of fig. 7 or 8 instead of the cited description of col. 10, lines 7-16 (as argued on p. 10, lines 23-28) for referencing the conditions table to be used for decision making when a new order (connection request) to provision the end user with a virtual circuit is received.

***Conclusion***

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

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the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Warner Wong whose telephone number is 571-272-8197. The examiner can normally be reached on 6:30AM - 3:00PM, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on 571-272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Art Unit 2616

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